



US008631533B1

(12) **United States Patent**
Gulian et al.

(10) **Patent No.:** **US 8,631,533 B1**
(45) **Date of Patent:** **Jan. 21, 2014**

(54) **FOOTWEAR CLEANER AND DISINFECTANT**

(75) Inventors: **Ana M. Gulian**, Chadds Ford, PA (US);
Paul M. Gulian, Chadds Ford, PA (US)

(73) Assignee: **The United States of America as
represented by the Secretary of the
Navy**, Washington, DC (US)

4,432,112	A *	2/1984	Muller et al.	15/36
5,545,257	A	8/1996	Vella	
5,964,959	A *	10/1999	Bleth	134/32
6,813,810	B2 *	11/2004	Beynon	15/406
8,512,631	B2 *	8/2013	Kerr	422/24
2009/0038096	A1	2/2009	Hollander	
2010/0193709	A1	8/2010	Dalton	

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 400 days.

JP 2010-82085 A * 4/2010 A47L 23/02
* cited by examiner

(21) Appl. No.: **13/161,536**

Primary Examiner — Laura C Guidotti

(22) Filed: **Jun. 16, 2011**

(74) *Attorney, Agent, or Firm* — Dave A. Ghatt

(51) **Int. Cl.**
A47L 23/02 (2006.01)

(57) **ABSTRACT**

(52) **U.S. Cl.**
USPC **15/36; 15/97.2**

(58) **Field of Classification Search**
USPC 15/36–37, 97.2
See application file for complete search history.

An apparatus for cleaning and disinfecting footwear or the foot of a user. More particularly, a user controlled multi-functioning device that performs both cleaning and disinfecting of footwear upon contact. The cleaning and disinfecting apparatus includes one or more cleaning rollers physically contacting the footwear or foot and one or more disinfectant sources, which may be radiation sources that emits UV rays e.g., or charge particle source that emits a cold plasma blast.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,726,414	A *	12/1955	Lindquist	15/4
4,014,060	A *	3/1977	Taylor	15/36

5 Claims, 3 Drawing Sheets

